

The exhalant canal-system also consists of a series of more or less lacunar spaces, opening into one another, and finally discharging on to the surface through the oscula; their ultimate ramifications are of comparatively large size, and are readily distinguished from the ultimate inhalant lacunæ by two important characters: (i.) they are not subdivided by strands of mesodermal tissue; (ii.) they are very definitely bounded, and are surrounded by the flagellated chambers.

The flagellated chambers, clustered around the exhalant lacunæ, open directly into the latter by means of wide mouths, as shown in the accompanying woodcut. There are no cameral canaliculi. The proximal portion of each flagellated chamber appears, in the present condition of the sponge, to project freely into the lumen of the inhalant lacuna, in such a manner that it would be completely immersed in the incurrent stream of water; this appearance, however, is probably in part due to the shrinking away of the surrounding tissues owing to the action of the spirit in which the specimen was preserved. In form the chambers are subspherical, and they are very small, measuring only about 0.02 millim. in diameter.

It is important to notice that the canal-system thus described agrees essentially with that of the few other genera of *Halichondrina* whose canal-system is as yet known to us. Minor differences, which are likely to be of considerable importance for systematic purposes, certainly exist in the arrangement of the canal-systems of these different genera; thus in the species under consideration the structure and arrangement of the ultimate inhalant lacunæ would appear to be decidedly characteristic, possibly even affording a character of generic importance, and that in a genus where such characters are greatly needed; but in all the *Halichondrina* the *fundamental* type of canal-system appears to be the same—*i. e.*, according to Vosmaer's third type<sup>1</sup>.

The fundamental agreement of the canal-system of *Pachychalina spinosissima* with that of *Halichondria panicea*, a species which I have also had the opportunity of studying carefully with well-preserved material, and its close resemblance even in certain minor details, may perhaps be regarded as an argument (though only of a very general character) in favour of the view that the *Chalininæ* are very intimately related to the *Renierinæ*, and of uniting these two groups as two subfamilies of the same family (*Homorrhaphidæ*, Ridley and Dendy<sup>2</sup>).

#### EXPLANATION OF PLATE XLIV.

- Fig. 1. *Pachychalina spinosissima*, seen from the upper surface; natural size.  
 2. Portion of a surface-section, showing the arrangement of the pores and the dermal skeleton.  
 3. Oxea.

<sup>1</sup> Further details concerning the arrangement of the canal-system in the *Halichondrina* are given by Mr. Ridley and myself in our Report on the Monaxonida dredged by H.M.S. 'Challenger.'

<sup>2</sup> Ann. & Mag. Nat. Hist. ser. 5, vol. xviii. p. 326; and Report on the Monaxonida dredged by H.M.S. 'Challenger,' p. 1, &c.